

What is claimed is:

1. An apparatus for correcting keystone distortions in a display system comprising:

5           a horizontal size generator that receives  $N$  horizontal sync signals of an input image and generates  $N$  corresponding horizontal output sizes, each of said output sizes being generated at each of said sync signals based on a horizontal input size, a vertical size, and a desired keystone factor of said input image; and

10           a format converter that receives said input image and generates an output image, each line of said output image now having said corresponding horizontal output size, where  $N$  represents a total number of lines of said output image.

15           2. The apparatus of claim 1 further comprising:

          a sync signal generator that generates read control signals based on said sync signals and said horizontal output sizes; and

20           a line memory that stores each line of said output image generated from said format converter and outputs said stored line of said output image according to said read control signals.

3. The apparatus of claim 1 further comprising:

a sync signal generator that generates read control signals based on said sync signals and said horizontal output sizes; and

5 a line memory that stores each line of said input image and outputs said stored line of said input image to said format converter according to said read control signals.

4. An apparatus for correcting keystone distortions in a display system comprising:

a horizontal size generator that receives  $N$  horizontal sync signals of an input image and generates  $N$  corresponding horizontal output sizes, each of said output sizes being generated at each of said sync signals based on a horizontal input size and each of horizontal keystone offsets of said input image; and

a format converter that receives said input image and generates an output image, each line of said output image now having said corresponding horizontal output size,

20 where  $N$  represents a total number of lines of said output image.

5. The apparatus of claim 4 further comprising:

a sync signal generator that generates read control signals based on said sync signals and said horizontal output sizes; and

5 a line memory that stores each line of said output image generated from said format converter and outputs said stored line of said output image according to said read control signals.

6. The apparatus of claim 4 further comprising:

a sync signal generator that generates read control signals based on said sync signals and said horizontal output sizes received; and

a line memory that stores each line of said input image and outputs said stored line of said input image to said format converter according to said read control signals.

7. A method for correcting keystone distortions in a display system comprising:

20 receiving horizontal sync signals of an input image;  
generating corresponding horizontal output sizes, each of said output sizes being generated at each of sync signals based on a horizontal input size, a vertical size, and a desired keystone factor of said input image; and

receiving said input image and generating an output image by a format converter, each line of said output image now having said corresponding horizontal output size.

5 8. The method of claim 7 further comprising:

generating read control signals based on said sync signals and said horizontal output sizes; and

storing each line of said output image generated from said format converter and outputting said stored line of said output image according to said read control signals.

9. The method of claim 7 further comprising:

generating read control signals based on said sync signals and said horizontal output sizes; and

15 storing each line of said input image and outputting said stored line of said input image to said format converter according to said read control signals.

10. The apparatus of claim 7, wherein the  $i$ th horizontal output size is larger than the  $(i-1)$ th horizontal output size, and the  $N$ th horizontal output size is equal to said horizontal input size, where  $i=2,3,4,\dots,N$ .

11. The apparatus of claim 7, wherein the  $i$ th horizontal output size is larger than the  $(i-1)$ th horizontal output size, and the first horizontal output size is equal to said horizontal input size, where  $i=2,3,4,\dots N$ .

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12. The apparatus of claim 7, wherein the  $i$ th horizontal output size is smaller than the  $(i-1)$ th horizontal output size, and the  $N$ th horizontal output size is equal to said horizontal input size, where  $i=2,3,4,\dots N$ .

13. The apparatus of claim 7, wherein the  $i$ th horizontal output size is smaller than the  $(i-1)$ th horizontal output size, and the first horizontal output size is equal to said horizontal input size, where  $i=2,3,4,\dots N$ .

14. A method for correcting keystone distortions in a display system comprising:

receiving horizontal sync signals of an input image;

generating corresponding horizontal output sizes, each of said horizontal output sizes being generated at each of sync signals based on a horizontal input size and each of horizontal keystone offsets of an input image; and

receiving said input image and generating an output image by a format converter, each line of said output image now having said corresponding horizontal output size.

5 15. The method of claim 14 further comprising:

generating read control signals based on said horizontal sync signals and said horizontal output sizes received; and

storing each line of said output image generated from said format converter and outputting said stored line of said output image according to said read control signals.

16. The method of claim 14 further comprising:

generating read control signals based on said horizontal sync signals and said horizontal output sizes received; and

storing each line of said input image and outputting said stored line of said input image to said format converter according to said read control signals.

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17. The apparatus of claim 14, wherein the  $i$ th horizontal output size is larger than the  $(i-1)$ th horizontal output size, and the  $N$ th horizontal output size is equal to said horizontal input size, where  $i=2,3,4,\dots,N$ .

18. The apparatus of claim 14, wherein the  $i$ th horizontal output size is larger than the  $(i-1)$ th horizontal output size, and the first horizontal output size is equal to said horizontal  
5 input size, where  $i=2,3,4,...N$ .

19. The apparatus of claim 14, wherein the  $i$ th horizontal output size is smaller than the  $(i-1)$ th horizontal output size, and the  $N$ th horizontal output size is equal to said horizontal  
10 input size, where  $i=2,3,4,...N$ .

20. The apparatus of claim 14, wherein the  $i$ th horizontal output size is smaller than the  $(i-1)$ th horizontal output size, and the first horizontal output size is equal to said horizontal  
15 input size, where  $i=2,3,4,...N$ .